Contents

Preface ix

List of participants x

Nutrient Fluxes .....

A model of nutrient dynamics in shallow lakes in relation to multiple stable states
by J.H. Janse 1–8

Phosphorus release in Lake Großer Müggelsee and its implications for lake restoration
by A. Kleeberg & H.-P. Kozerski 9–26

Do rooted macrophytes increase sediment phosphorus release?
by D. Stephen, B. Moss & G. Phillips 27–34

Facilitation of phosphate assimilation by aquatic mycorrhizae of *Vallisneria americana* Michx.
by C. Wigand & J.C. Stevenson 35–41

Phosphorus balance of a polytrophic shallow lake with the consideration of phosphorus release
by K. Ramm & V. Scheps 45–53

Relative nitrogen deficiency without occurrence of nitrogen-fixing blue-green algae in a hypertrophic reservoir
by M. Présing, K.V.-Balogh, L. Vörös & H.M. Shafik 55–61

Biotic Structure .....

High bacterial production in hypertrophic shallow reservoirs rich in humic substances
by K.V.-Balogh & L. Vörös 63–70

The occurrence of heterotrophic bacteria decomposing some macromolecular compounds in the shallow estuarine lakes
by Z. Mudryk & W. Donderski 71–78

Picoplankton and other size groups of phytoplankton in various shallow lakes
by E. Szeląg-Wasielewska 79–85

The dynamics and importance of picoplankton in shallow, dystrophic lake in comparison with surface waters of two deep lakes with contrasting trophic status
by I. Jasser 87–93

Influence of small-scale turbulence and large-scale mixing on phytoplankton primary production
by F. Gervais, D. Opitz & H. Behrendt 95–105

Factors controlling the dominance of *Planktothrix agardhii* and *Limnothrix redekei* in eutrophic shallow lakes
by J. Rücker, C. Wiedner & P. Zippel 107–115

Meiobenthos communities of some subarctic lakes
by V.V. Skvortsov 117–124

Significance of subfossile chironomid remains in classification of shallow lakes
by K.P. Brodersen & C. Lindegaard 125–132

Chironomus plumosus – what regulates its abundance in a shallow reservoir?
by Z. Kajak 133–142

Macroinvertebrate communities in relation to submerged vegetation in two *Chara*-dominated lakes
by M.S. van den Berg, H. Coops, R. Noordhuis, J. van Schie & J. Simons 143–150

Trophic Interactions .....

Top-down control in freshwater lakes: the role of nutrient state, submerged macrophytes and water depth
by E. Jeppesen, J.P. Jensen, M. Søndergaard, T. Lauridsen, L.J. Pedersen & L. Jensen 151–164

Seasonal successions and trophic relations between phytoplankton, zooplankton, ciliates and bacteria in a hypertrophic shallow lake in Vienna, Austria
by J. Mayer, M.T. Dokulil, M. Salbrechter, M. Berger, T. Posch, G. Pfister, A.K.T. Kirschner, B. Velimirov, A. Steitz & T. Ulbricht 165–174

Zooplankton–phytoplankton interactions in lakes Võrtsjärv, Peipsi (Estonia) and Yaskhan (Turkmenia)
by T. Nõges 175–183

Biotic interactions of the zooplankton community of a shallow, humic lake
by T. Węgleńska, J. Ejsmont-Karabin & J.I. Rybak 185–195

Interactions between piscivores, zooplanktivores and zooplankton in submerged macrophytes: preliminary observations from enclosure and pond experiments
by L. Jacobsen, M.R. Perrow, F. Landkildehus, M. Hjørne, T.L. Lauridsen & S. Berg . 197–205

The impact of predation by perch on the size-structure of *Chironomus* larvae – the role of vertical distribution of the prey in the bottom sediments, and habitat complexity
by R. Kornijów 207–213

Impact of fish predation on a small-bodied cladoceran: limitation or stimulation?
by M. Ślusarczyk 215–221

Size-selective filtration and taxon-specific digestion of planktonic algae by silver carp (*Hypophtalmichthys molitrix* Val.)
by L. Vörös, I. Oldal, M. Présing & K.V.-Balogh 223–228

Submerged macrophytes as refuges for grazing Cladocera against fish predation: observations on seasonal changes in relation to macrophyte cover and predation pressure
by J.H. Stansfield, M.R. Perrow, L.D. Tench, A.J.D. Jowitt & A.A.L. Taylor 229–240

Interactions between coot (*Fulica atra*) and submerged macrophytes: the role of birds in the restoration process
by M.R. Perrow, J. Schutten, J.R. Howes, T. Holzer, F.J. Madgwick & A.J.D. Jowitt .. 241–225

Whole Lake Studies

Vertically-challenged limnology; contrasts between deep and shallow lakes
by B. Moss, M. Beklioglu, L. Carvalho, S. Kilinc, S. McGowan & D. Stephen 257–267

Why "very shallow" lakes are more successful opposing reduced nutrient loads
by B. Nixdorf & R. Deneke 269–284

Changes in ecological relationships in a group of eight shallow lakes in the Polesie Lubelskie Region (eastern Poland) over forty years
by T.J. Chmielewski, S. Radwan & B. Sielewicz 285–295

Why does Druzno Lake (Poland) still exist? On the conditions of the pond ecosystem sustainability
by A. Giziński, A. Kentzer & M. Rejewski 297–304

Biomanipulation, Restoration and Management

Food-web manipulation in shallow, eutrophic lakes: bridging the gap between whole-lake approach and behavioural and demographic studies
by J. Pijanowska & A. Prejs 305–310

Pike (*Essox lucius* L.) stocking as a biomanipulation tool. 1. Effects on the fish population in Lake Lyng, Denmark
by S. Berg, E. Jeppesen & M. Søndergaard 311–318

Pike (*Essox lucius* L.) stocking as a biomanipulation tool. 2. Effects on lower trophic levels in Lake Lyng, Denmark
by M. Søndergaard, E. Jeppesen & S. Berg 319–325

Food-web manipulation in the Maltański Reservoir
by R. Gołdyn, A. Kozak & W. Romanowicz 327–333

Effects of biomanipulation in the large and shallow Lake Woldervijd, The Netherlands
by M.-L. Meijer & S.H. Hosper 335–349

The process of biomass formation as the key point in the restoration of tropical eutrophic lakes
by E. von Sperling 351–354

Biomanipulation in shallow lakes: state of the art
by M.R. Perrow, M.-L. Meijer, P. Dawidowicz & H. Coops 355–365

Case Studies

Lake Volkerak-Zoom: a lake shifting from the clear to the turbid state
by C.P.M. Breukers, E.M. van Dam & S.A. de Jong 367–376

Food-web manipulation in a small, eutrophic Lake Wirbel, Poland: the effect of replacement of key predators on epiphytic fauna
by A. Prejs, P. Koperski & K. Prejs 377–381

Food-web manipulation in a small, eutrophic Lake Wirbel, Poland: long-term changes in fish biomass and basic measures of water quality. A case study
by A. Prejs, J. Pijanowska, P. Koperski, A. Martyniak, S. Boroń & P. Hliwa 383–386

Eutrophication processes in a shallow, macrophyte-dominated lake – nutrient loading to and flow through Lake Łuknajno (Poland)
by I. Kufel & L. Kufel 387–394

Eutrophication processes in a shallow, macrophyte-dominated lake – alkaline phosphatase activity in Lake Łuknajno (Poland)
by K. Kalinowska 395–399

Eutrophication processes in a shallow, macrophyte-dominated lake – factors influencing zooplankton structure and density in Lake Łuknajno (Poland)
by A. Karabin, J. Ejsmont-Karabin & R. Kornatowska 401–409

Eutrophication processes in a shallow, macrophyte-dominated lake – species differentiation, biomass and their distribution of submerged macrophytes in Lake Łuknajno (Poland)
by J. Królikowska 411–416